

PATENT ABSTRACTS OF JAPAN

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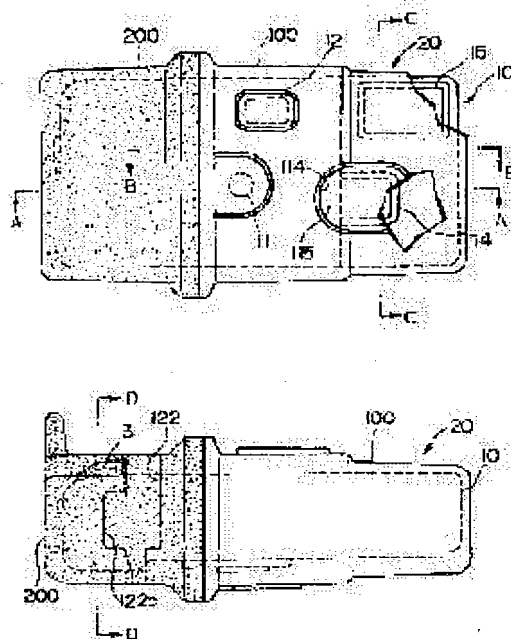
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(54) WATERPROOF CAMERA

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a waterproof camera facilitated in the winding operation of a film.

SOLUTION: The periphery of a camera main body 10 is covered with a cover 20 and this cover 20 is provided with a cover main body 100 for covering the camera main body 10 and an elastomer outer part 200 arranged on the outside surface of the cover main body 100. This main body 100 is notched over almost all around its periphery to obtain a weakening part 122. The outside of the weakening part 122 is covered with the outer part 200. A part of the cover main body 100 can be turned around the weakening part on the front side of the camera main body 10, as a supporting point. At this time, the inside surface of the cover main body 100 is abutted on the outside surface of a film winding means to rotate it. Thus, the winding operation of the film can be easily executed.



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CLAIMS

[Claim(s)]

[Claim 1] The main part of a camera and the aforementioned main part of a camera are equipped with covering which gives waterproofness. the aforementioned main part of a camera It has the film winding-up means exposed to the exterior of the aforementioned main part of a camera. the aforementioned covering It has the lateral part arranged in the aforementioned main part of a camera at the external surface of a wrap covering main part and the aforementioned covering main part. the aforementioned covering main part It is the waterproofing camera which has the weakening section of the aforementioned covering main part mostly formed over the perimeter, and is characterized by the aforementioned lateral part being constituted by the spring material.

[Claim 2] The main part of a camera and the aforementioned main part of a camera are equipped with covering which gives waterproofness. the aforementioned main part of a camera It has the film winding-up means exposed to the exterior of the aforementioned main part of a camera. the aforementioned covering It has the lateral part arranged in the aforementioned main part of a camera at the superficies of a wrap covering main part and the aforementioned covering main part. the aforementioned covering main part It has the 1st main part and the 2nd main part. on the 1st main part of the above, and the 2nd main part Opening is formed in the mutual opposed face. openings of the 1st main part of the above and the 2nd main part It is the waterproofing camera which it is inserted in mutually, and the 2nd main part of the above has the weakening section of the 2nd main part of the above mostly formed over the perimeter, and is characterized by the aforementioned lateral part being constituted by the spring material.

[Claim 3] The aforementioned lateral part is a waterproofing camera according to claim 1 or 2 characterized by being made to extend by the contact section of the 1st main part of the above, and the 2nd main part of the above.

[Claim 4] The waterproofing camera according to claim 3 characterized by forming the heights which push the aforementioned lateral part on the 1st main part of the above, or the 2nd main part of the above along with the aforementioned opening.

[Claim 5] the aforementioned weakening section is made into the broad notching section in an unilateral [near / aforementioned / the film winding-up means], and is taken as the narrow notching section rather than the latus notching section of the aforementioned width of face in the opposite side of the aforementioned unilateral — having — **** — the aforementioned lateral part — the above — a waterproofing camera given in any 1 term of the claims 1-4 characterized by having covered the broad notching section and the narrow notching section so that it may become ****

[Claim 6] the aforementioned weakening section is made into the broad notching section in an unilateral [near / aforementioned / the film winding-up means], and the slot of the shape of the shape of U character and V character forms in the opposite side of the aforementioned unilateral — having — **** — the aforementioned lateral part — the above — a waterproofing camera given in any 1 term of the claims 1-4 characterized by having covered the broad notching section so that it may become ****

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the camera, i.e., the waterproofing camera, which has waterproof ability.

[0002]

[Description of the Prior Art] There was a wrap thing etc. with covering about the circumference of the thing and camera which gave waterproof ability by attaching a sealant etc. in the main part of a camera itself as a conventional waterproofing camera. However, also in which composition, there is a problem of being hard to do the winding-up work of a film.

[0003]

[Problem(s) to be Solved by the Invention] this invention was made in view of the aforementioned situation, and aims to let the winding-up work of a film offer an easy waterproofing camera.

[0004]

[Means for Solving the Problem] The waterproofing camera according to claim 1 equips the main part of a camera, and the aforementioned main part of a camera with covering which gives waterproofness. the main part of a camera It has the film winding-up means exposed to the exterior of the main part of a camera. covering It has the lateral part arranged in the main part of a camera at the superficies of a wrap covering main part and a covering main part, the covering main part has the weakening section of a covering main part mostly formed over the perimeter, and the lateral part is considered as the composition constituted by the spring material.

[0005] The waterproofing camera according to claim 2 equips the main part of a camera, and the aforementioned main part of a camera with covering which gives waterproofness. the main part of a camera It has the film winding-up means exposed to the exterior of the main part of a camera. covering It has the lateral part arranged in the main part of a camera at the superficies of a wrap covering main part and a covering main part. a covering main part It has the 1st main part and the 2nd main part. on the 1st main part and the 2nd main part Opening is formed in the mutual opposed face, openings of the 1st main part and the 2nd main part are inserted in mutually, as for the 2nd main part, it has the weakening section of the 2nd main part mostly formed over the perimeter, and the lateral part has composition constituted by the spring material.

[0006] The waterproofing camera according to claim 3 made the contact section of the 1st main part and the 2nd main part extend a lateral part in a waterproofing camera according to claim 1 or 2.

[0007] The waterproofing camera according to claim 4 formed the heights which push a lateral part on the 1st main part or the 2nd main part along with opening in the waterproofing camera according to claim 3.

[0008] A waterproofing camera according to claim 5 makes the weakening section the broad notching section in an unilateral [near the film winding-up means] in a waterproofing camera given in any 1 term of claims 1-4, and is made into the narrow notching section rather than the latus notching section of width of face in the opposite side of an unilateral, and the lateral part has composition which has covered the broad notching section and the narrow notching section so that it may become ****.

[0009] A waterproofing camera according to claim 6 makes the weakening section the broad notching section in an unilateral [near the film winding-up means] in a waterproofing camera given in any 1 term of claims 1-4, and forms the slot of the shape of the shape of U character, and V character in the opposite side of the aforementioned unilateral, and the lateral part has composition which has

covered the broad notching section so that it may become ****.

[0010]

[Embodiments of the Invention] The waterproofing camera concerning 1 operation form of this invention is explained based on an attached drawing. The waterproofing camera concerning this operation form is constituted considering the main part 10 of a camera, and the covering 20 which gives waterproofness to cover the whole main part 10 of a camera as a subject.

[0011] The camera of a short form with which the main part 10 of a camera is called disposable camera with this operation form is used. The main part 10 of a camera is the thing of the composition of the common knowledge equipped with a lens 11, the finder 12, the film winding-up means 13 exposed to the exterior of the main part 10 of a camera, the stroboscope charge switch 14, and the stroboscope 15, as shown in drawing 1 - drawing 3. In addition, in drawing 1 - drawing 3, the state where covering 20 was attached is shown in the main part 10 of a camera. The film winding-up means 13 is formed in the shape of a disk, and a skid means like a knurling tool is prepared in the peripheral face. Already, since the composition of the main part 10 of a camera is the same as that of a well-known thing, it omits the explanation about other details.

[0012] Covering 20 is formed in tubed [to which the cross section makes the shape of a rectangle mostly] as a whole. Covering 20 is constituted considering the lateral part 200 arranged in the main part 10 of a camera at the external surface of the wrap covering main part 100 and the covering main part 100 as a subject. The covering main part 100 is constituted considering the 1st main part 110 and the 2nd main part 120 as a subject as shown in drawing 4. It is formed in the shape of [which has openings 111 and 121 in an opposed face with mutual 1st main part 110 and 2nd main part 120] a cylinder like object with base. The openings 111 and 121 of the 1st main part 110 and the 2nd main part 120 can be inserted in mutually, and can cover now the outside of the main part 10 of a camera with the covering main part 100 by this. With this operation form, both the 1st main part 110 and the 2nd main part 120 are formed of transparent comparatively hard synthetic resin. As synthetic resin, a polystyrol, polyester, a methyl methacrylate, a polycarbonate, etc. can be used, for example.

[0013] Heights 111a which you were made to extend by the direction which meets the side edge of opening 111 is formed in the 1st main part 110 (refer to drawing 4 and drawing 8). Heights 111a is forced to the external surface of a lateral part 200.

[0014] The side rib 112 and the front rib 113 are continuously formed in the inside of the 1st main part 110 (refer to drawing 5 and drawing 6). It is made to project the side rib 112 from the inside of the side (side by the side of drawing 5 Nakamigi) of the opening 111 and the opposite side in the 1st main part 110 by the direction of the inside.

[0015] It is made to extend the side rib 112 along with a horizontal direction (the drawing 5 Nakagami down) mostly. The height H1 by the side of an end (side by which the tooth back of the main part 10 of a camera is arranged) is slightly made higher than the height H2 by the side of the other end (side by which the lens 11 side of the main part 10 of a camera is arranged), and the height of the side rib 112 is applied to height H2, and is made to incline gently-sloping from height H1. It is made to extend the front rib 113 along with a horizontal direction like the side rib 112 mostly. The angle alpha of the side rib 112 and the front rib 113 (refer to drawing 5) to make is set as 90 degrees. By these composition, with this operation form, the main part 10 of a camera held inside the covering main part 100 can be made to incline slightly, and can be held (where the counterclockwise rotation in drawing 5 is rotated slightly). It is made to extend ribs 112 and 113 horizontally in the position between the stroboscopes 15 and lenses 11 in the main part 10 of a camera (position shown with the dashed line in drawing 1).

[0016] Opening 114 is formed in the front-face side (left-hand side in drawing 6) of the 1st main part 110 in the position equivalent to the stroboscope charge switch 14 of the main part 10 of a camera (refer to drawing 1 and drawing 6). It is attached in the inside periphery of opening 114 so that the elastic film 115 may become ****. A film 115 can be easily attached in the 2nd main part 120 by attachment after for example, film insert molding or fabrication.

[0017] The 2nd main part 120 has the weakening section 122 formed over the perimeter (perimeter which meets in the vertical direction in drawing 4) of the 2nd main part 120. The weakening section 122 is constituted from this operation gestalt by what (that is, it considers as the notching section or the opening section) a part of 2nd main part 120 is not formed for along with the perimeter of the 2nd main part 120. The weakening section 122 is formed in broad notching section 122a in an about 13 film winding-up means unilateral (it sets to drawing 4 and is the bottom), and is formed in narrow notching section 122b rather than broad notching section 122a in the opposite side (it sets to drawing

4 and is the bottom) of an unilateral. As width of face of broad notching section 122a, it is referred to as about 15mm with this operation gestalt, and may be about 3mm with this operation gestalt as width of face of narrow notching section 122b. In the portion which counters the upper surface of the main part 10 of a camera, roll-off 122c (the alternate long and short dash line showed drawing 2) bent and formed so that it might escape from the upper surface of the shutter section (not shown) formed in the upper surface of the main part 10 of a camera is formed in the weakening section 122.

[0018] Near the edge (left end in drawing 4) of the 2nd main part 120, the lever section 123 which projects in the direction of an outside of the 2nd main part 120 is formed.

[0019] The contact side 124 made to approach to the position which contacts mostly the portion which counters the film winding-up means 13 of the main part 10 of a camera at this winding-up means 13 is formed in the inside of the 2nd main part 120 (refer to drawing 7 , drawing 8 , and drawing 9). The contact side 124 is equipped with a skid means 125 to have the skid function of the contact side 124 and the film winding-up means 13. With this operation gestalt, the continuous irregularity is used as a skid means 125.

[0020] The lateral part 200 is constituted by the spring material. The elastomer which has rubber elasticity is used as a spring material. It specifically considers as the composition which made sault part RIBUREN (tradename) HD 140 by new Chemicals incorporated company 50 to 70% of the weight, and made the remainder KOSUMOGERU HC 04 made from a KOSUMO, Inc. meter (tradename), and what was fabricated at about 230 degrees C is used. As a lateral part 200 covers the whole superficies of the 2nd main part 120, and the opening edge of opening 121, they are stuck on the 2nd main part 120 (refer to drawing 1 - drawing 4). Adhesion with a lateral part 200 and the 2nd main part 120 can perform both easily by [so-called] carrying out two color molding. Therefore, the lateral part 200 covered the outside of the weakening section 200, and it was stuck on the covering main part 100 in the circumference of the weakening section 200. Moreover, it was made to have extended the lateral part 200 by even the contact section of the 1st main part 110 and the 2nd main part 120.

[0021] Subsequently, the operation of said waterproofing camera is explained.

[0022] First, in order to wind up a film, the counterclockwise rotation in drawing 8 is made to rotate the lever section 123 of the 2nd main part 120. Then, it pulls through the lever section 123 to the lateral part 200 in the portion equivalent to broad notching section 122a, and the force is added. In this portion, since the lateral part 200 is not stuck to the 2nd main part 120, it can be easily extended according to the hauling force. Then, the lever section 123 can rotate narrow notching section 122b as the supporting point. Then, the skid means 125 formed in the inside of the 2nd main part 120 can contact the film winding-up means 13, and the film winding-up means 13 can be rotated. Then, if the force which was being applied to the lever section 123 is loosened, the lever section 123 will return to an initial valve position by the elastic force of a lateral part 200. Subsequently, if the lever section is operated like the above, the film winding-up means 13 can be rotated further. Thus, a film can be wound up.

[0023] Subsequently, it can be used like the usual camera by depressing the upper shell shutter of covering 20.

[0024] With the waterproofing camera of this operation form, since the weakening section 122 and the lateral part 200 were formed in covering 20, there is an advantage of becoming possible to wind up a film easily, by making covering 20 deform appropriately.

[0025] Moreover, with the waterproofing camera of this operation form, since the weakening section 122 is completely covered by the lateral part 200, by the lateral part 200, the flood from the weakening section 122 to the interior of covering 20 can be prevented, and waterproofness can be given to the main part 10 of a camera.

[0026] Moreover, with the waterproofing camera of this operation gestalt, since the covering main part 100 was divided into the 1st main part 110 and the 2nd main part 120, the main part 10 of a camera can be put into the interior of both, the main part 10 of a camera can be enclosed with the interior of the covering main part 100 only by inserting in the mutual openings 111 and 121, and there is also an advantage that fabrication operation is simple.

[0027] Furthermore, with the waterproofing camera of this operation gestalt, since the contact section of the 1st main part 110 and the 2nd main part 120 was made to extend the lateral part 200 which consists of a spring material, a lateral part 200 can be made to be able to intervene among both, and the waterproofing effect to the main part 10 of a camera can be raised according to the seal effect by the lateral part 200.

[0028] Moreover, with the waterproofing camera of this operation gestalt, since heights 111a which

pushes the lateral part 200 which becomes the 1st main part 110 from a spring material was formed along with opening 111, heights 111a can be stuffed into the front face of a lateral part 200.

Therefore, the waterproofing effect to the main part 10 of a camera can be raised further.

[0029] Furthermore, with the waterproofing camera of this operation gestalt, since the weakening section 122 was equipped with broad notching section 122a and narrow notching section 122b, there is the following advantage. That is, in broad notching section 122a, since it is broad, the amount of elongation of a lateral part 200 can be enlarged, and the rotation of the film winding-up means 13 per rotation can be enlarged. Moreover, in narrow notching section 122b, since it is narrow, the rotation supporting point can be set almost constant. Therefore, the winding-up work of a film can be done still more easily by these composition.

[0030] Moreover, with the waterproofing camera of this operation gestalt, since the side rib 112 and the front rib 113 were formed, there are the following advantages. That is, generally, it sets to resin mold goods and an inclination is attached a little to mold goods in consideration of the ease of escaping from the mold after fabrication. For example, reference of the configuration in drawing 5 has attached the taper so that it may apply to a left end and may spread very slightly gradually from a right end (all over drawing, it has hardly appeared). If the main part 10 of a camera is arranged in this situation in parallel with the medial-axis line (it sets to drawing 5 and is a horizontal line) of the 2nd main part 120, to the lens 11 of the main part 10 of a camera, the 2nd main part 120 will be in the state where it inclined slightly. Then, the light which reaches a lens 11 through the 2nd main part 120 having un-arranged [that it will be made to be distorted unnaturally and distortion appears in a picture with the 2nd main part 120]. On the other hand, with the waterproofing camera of this operation gestalt, with the side rib 112 and the front rib 113, since the main part 10 of a camera can be supported in the state where it inclined and a lens 11 and the front face of the 2nd main part 120 can be substantially considered mostly as parallel (a lens is parallel where it is assumed that it is a flat surface when a lens is the spherical surface), distortion of the picture acquired can be reduced and quality of image can be raised.

[0031] Moreover, with the waterproofing camera of this operation gestalt, since the front rib 113 is formed in the inside of the covering main part 100, there is the following advantage. That is, when a stroboscope 15 is made to emit light and there is no front rib 113, the light from a stroboscope may reflect by the inside of the covering main part 100, and the part may enter into a lens 11. Then, there is a possibility that the quality of the picture acquired through a lens 11 may deteriorate. With this operation gestalt, since the front rib 113 was formed between the lens 11 and the stroboscope 15, it becomes possible to be able to interrupt the light from a stroboscope, therefore to raise the quality of a photograph with the front rib 113.

[0032] Furthermore, with this operation form, since roll-off 122c was formed in the weakening section 122, in case a shutter is pushed, a shutter can be pushed only by depressing the soft lateral part 200, without being prevented by the covering main part 100 which is hard. For this reason, there is an advantage that the operability as a camera improves.

[0033] In addition, in this operation form, although the weakening section 122 was constituted from the notching section, it does not restrict to this. Intensity is just weakening so that rotation of the covering main part 100 which was described above may be permitted in short.

[0034] Moreover, in this operation form, although considered as the composition which prepares narrow notching section 122b, it is good also as composition which replaces with this, for example, forms the slot of the shape of the shape of U character, and V character in the inside of the 2nd main part 120 along the vertical direction. If it does in this way, since the rotation supporting point is fixed further, the improvement in operability is expectable.

[0035] Furthermore, although considered as the composition which the main part 10 of a camera is made to incline, and is held with the side rib 112 and the front rib 113 with this operation form, it does not restrict to this, and if a maintenance means to make the main part 10 of a camera incline, and to hold in short is established, what distortion of a picture is reduced for will be easy to be made.

[0036]

[Effect of the Invention] The waterproofing camera according to claim 1 equips the main part of a camera, and the aforementioned main part of a camera with covering which gives waterproofness. the main part of a camera It has the film winding-up means exposed to the exterior of the main part of a camera. covering It has the lateral part arranged in the main part of a camera at the external surface of a wrap covering main part and a covering main part. a covering main part It has the weakening section of a covering main part mostly formed over the perimeter, and it can do the winding-up work

of a film easily while it can give waterproofness to the main part of a camera, since the lateral part is considered as the composition constituted by the spring material.

[0037] The waterproofing camera according to claim 2 equips the main part of a camera, and the aforementioned main part of a camera with covering which gives waterproofness. the main part of a camera It has the film winding-up means exposed to the exterior of the main part of a camera. covering It has the lateral part arranged in the main part of a camera at the superficies of a wrap covering main part and a covering main part. a covering main part It has the 1st main part and the 2nd main part. on the 1st main part and the 2nd main part Opening is formed in the mutual opposed face. openings of the 1st main part and the 2nd main part It is inserted in mutually and the 2nd main part has the weakening section of the 2nd main part mostly formed over the perimeter. a lateral part Since it has composition constituted by the spring material, in addition to an effect according to claim 1, the work which contains the main part of a camera inside covering can be done simple.

[0038] It becomes possible to be able to raise the seal effect which can be put on both contact section, and to raise the waterproofing effect to the main part of a camera in a waterproofing camera according to claim 1 or 2, since the waterproofing camera according to claim 3 made the contact section of the 1st main part and the 2nd main part extend a lateral part.

[0039] In a waterproofing camera according to claim 3, since the waterproofing camera according to claim 4 formed the heights which push a lateral part on the 1st main part or the 2nd main part along with opening, it can raise further the waterproofing effect to the main part of a camera.

[0040] A waterproofing camera according to claim 5 is set to a waterproofing camera given in any 1 term of claims 1-4. In an unilateral [near the film winding-up means], make the weakening section into the broad notching section, and it is set to the opposite side of an unilateral. It considers as the narrow notching section rather than the latus notching section of width of face, and since the lateral part has composition which has covered the broad notching section and the narrow notching section so that it may become ****, it can raise the operability of a film winding-up means further.

[0041] A waterproofing camera according to claim 6 to a waterproofing camera given in any 1 term of claims 1-4 **, In an unilateral [near the film winding-up means], make the weakening section into the broad notching section, and it is set to the opposite side of the aforementioned unilateral. The slot of the shape of the shape of U character and V character is formed, and since the lateral part has covered the broad notching section so that it may become ****, it can make the rotation supporting point in rotation of covering an almost fixed position, and it becomes possible to raise the operability of a film winding-up means of it further.

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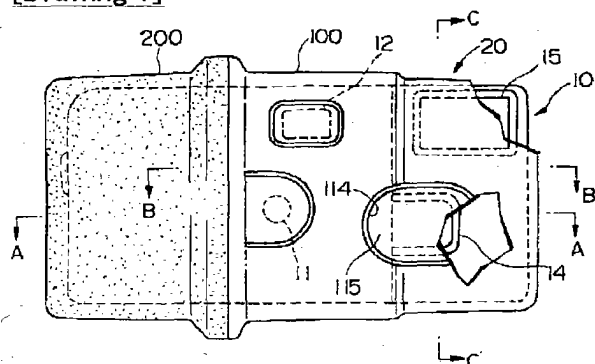
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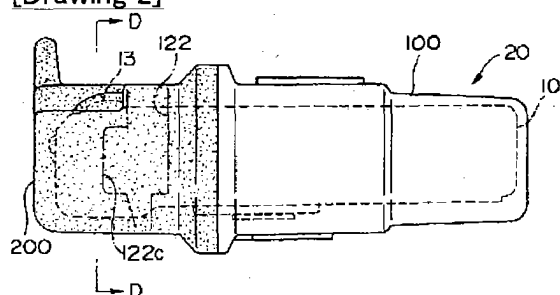
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DRAWINGS

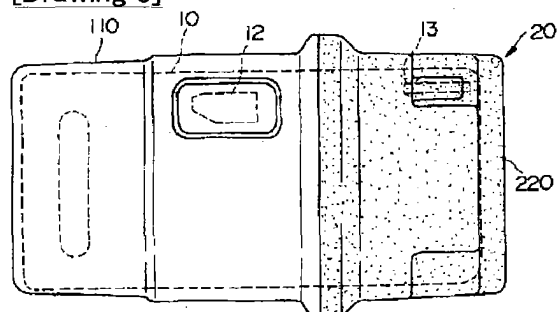
[Drawing 1]



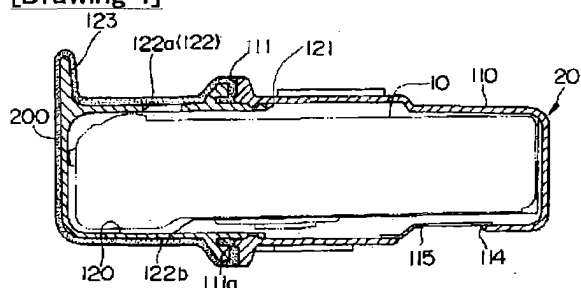
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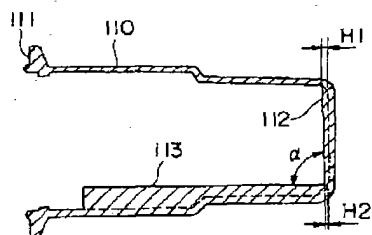
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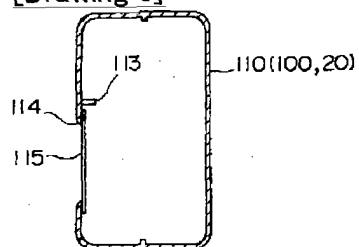
[Drawing 4]



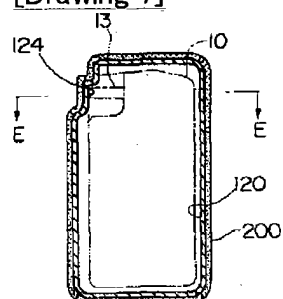
[Drawing 5]



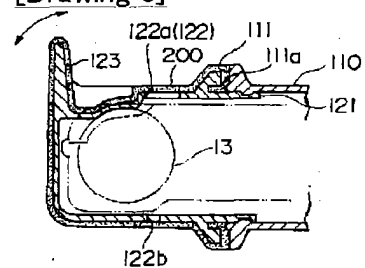
[Drawing 6]



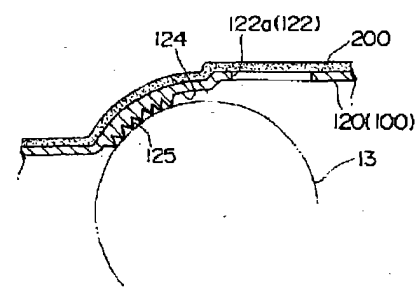
[Drawing 7]



[Drawing 8]



[Drawing 9]



[Translation done.]